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ABSTRACT

To provide a complete picture of vocational rehabilitation needs of the rural disabled and to assist agencies in the development of improved services for the rural disabled, researchers reviewed pertinent literature since 1960 and held informal discussions with knowledgeable professionals. The literature review revealed a lack of knowledge of rural rehabilitation needs even though 8.5 million disabled people live in non-metropolitan or rural areas where their vocational rehabilitation is impeded by economic, employment, health, transportation, education, cultural, and ethnicity barriers. In recent decades, agencies have used two major strategies to alleviate problems in service delivery to the rural disabled. Expansion of traditional service delivery programs in Wisconsin, Kentucky, Maine, New York, West Virginia, Arkansas, Vermont, and Minnesota has proved that rehabilitation services can be effectively extended into rural areas if adequate staffing and funding exist. Non-traditional services including indigenous volunteers and service providers, mobile units, professional rehabilitation teams, transportation systems, health services, and special education programs have also proved successful. Many state, regional, and national assessments of the needs of the disabled have been conducted but, because few have focused on rural areas, no clear definition of the needs of the rural disabled exists. (SB)

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Rural Rehabilitation
A State of the Art

Michael Leland
Mary Jo Schneider

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Arkansas Rehabilitation
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Arkansas Rehabilitation Services
March 1982

RURAL REHABILITATION

A State of the Art

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&

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March, 1982

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Michael Leland
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PREFACE

This is the first of two reports of Project R-181, "Rehabilitation Service Needs of the Rural Disabled." This first report is designed to familiarize the reader with existing literature pertaining to the characteristics and problems of the rural disabled, while the second report will describe the methodology and results of a survey conducted by the Arkansas Rehabilitation Research and Training Center (ARR&TC). The second report will deal with data from the field survey which evolved from the realization that little in-depth information exists about the problems of rural handicapped persons in general, and that there is a glaring lack of knowledge about rural disabled persons who are members of minority groups. A pilot study was therefore designed to identify salient problems of four subcultural groups living in rural areas of Arkansas, Oklahoma, and Texas. A modified form of behavioral assessment yielded rich, in-depth data about the nature of the problems faced by minority handicapped persons in rural environments. The second report will describe the research activities that identified the problems of rural Mexican-Americans, Ozark whites, Mississippi Delta blacks, and American Indians, and will make recommendations for improvements in service delivery.

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RURAL REHABILITATION

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SECTION I

Introduction to Rural Rehabilitation

SECTION I

Introduction to Rural Rehabilitation

In the United States an estimated 11.12% of the population have serious limitations to their usual activity because of one or more chronic conditions (U.S. Department of Health and Human Services, 1980). Although many needs of disabled persons have been highlighted during 1981, the International Year of Disabled Persons, the special needs of specific groups of disabled persons have not been adequately discussed. Little attention has been given to the unique problems faced by rural disabled persons, even though recent estimates show that disability is proportionately more prevalent in rural areas: 10.37% of the urban population have serious limitations, 12.75% of the rural non-farm population, and 12.6% of rural farm residents (U.S. Department of Health and Human Services, 1980).

Not only are disabled persons over-represented in rural areas, but socioeconomic indicators present evidence that they are more disadvantaged than their urban counterparts. Rural disabled persons tend to have a lower family income (Matthews, 1974), be less educated (Tamblyn, 1971), and have fewer job opportunities than their urban counterparts (MacGuffie, Janzen, & McPhee, 1969). Further, rural areas typically have inadequate housing for the disabled individual (Van Vechten & Pless, 1976), severe shortages of health personnel (Davis & Marshall, 1975), an absence of necessary health-care facilities (Hassinger & Whiting, 1976), poor or non-existent public transportation systems (Revis & Revis, 1978) as well as other important barriers for disabled persons (Nolan & Schwartz, 1973). These conditions signify a demand for an increased understanding of rural disabled persons and their vocational rehabilitation needs.

Purpose

This report was prepared with two major objectives: (1) to provide a complete and comprehensive picture of the vocational rehabilitation needs of disabled persons living in rural or sparsely populated areas, and (2) to assist the U.S. National Institute of Handicapped Research (NIHR) and the U.S. Rehabilitation Services Administration (RSA) in developing improved services for rural disabled persons. The difficulties associated with providing rehabilitation services to rural disabled persons have long been recognized by federal planning and policy divisions in the U.S. Department of Health, Education, and Welfare (DHEW) (now the U.S. Department of Health and Human Services (DHHS) and the U.S. Department of Education (DOE). The U.S. Rehabilitation Services Administration's research and evaluation strategy for FY 1978 included plans for improving services to rural disabled persons. Specifically, the principal research objective of RSA was to assure that state vocational rehabilitation agencies improve their outreach process. Most recently the

U.S. National Institute of Handicapped Research (NIHR) has targeted "Rehabilitation of Handicapped Individuals in Rural Areas" as an area for increased activity and resource allocation. NIHR is seeking data on the needs and problems of rural disabled persons, improved services, and techniques for retention of rehabilitation professionals.

Section II of this report provides an overview of the current perspective of rural rehabilitation in America. Attention is given to some of the major barriers experienced by rural disabled persons in their rehabilitation process. These barriers can be classified into seven major categories: economic, employment, health, education, transportation, culture, and ethnicity. Section II also presents some traditional and non-traditional approaches that have attempted to meet the needs of rural disabled persons. Focus in this section is on the success or failure of these different approaches.

The needs of rural disabled persons and how these needs compare to those of urban disabled persons is the major thrust of section III. Finally, in section IV the state of the art is summarized and future implications for rural disabled persons are discussed.

Methodology

This report evolved from a review of the literature and informal discussions with professionals knowledgeable in the area of rural rehabilitation. Computer-assisted literature searches of Psychological Abstracts, Sociological Abstracts, ERIC, NTIS, Project Share, and NARIC data bases were conducted. The bibliography at the end of each relevant article was reviewed to further identify pertinent references. Also, information was obtained from several individuals and state human service agencies about completed studies on the needs of rural disabled persons. References prior to 1960 were excluded from this study unless they were single sources of information vital to a major point of discussion.

Definitions

A major difficulty confronting any comprehensive data comparison on the needs of rural disabled persons is the lack of a common agreement about what constitutes "rural" and "disabled." The literature includes a variety of definitions for these terms. This section presents the most commonly used definitions. In later sections, when comparing research data across several studies, differences in definitions will be brought to the reader's attention.

Rural. A variety of terms such as "suburb," "small town," "farmland" have been used to refer to rural areas. Classifications have also been made on the basis of population per county or other specified geographic areas. Perhaps the most common way of defining rural and urban areas is the Standard Metropolitan Statistical Area (SMSA)/ non-SMSA contrast used by the Census Bureau.

A SMSA defined at the time of the 1970 Census consisted of a county or group of continuous counties which contained at least one city of 50,000 inhabitants or more, or twin cities with a combined population of at least 50,000. SMSA's are primarily urban, and non-SMSA's are predominantly rural. Non-SMSA's are divided into several subcategories based on degrees of rurality as measured by population per county. The subcategory most often used in defining rural areas in studies cited in this paper is "totally rural counties having no communities with populations greater than 2,500 (see Hines, Brown, & Zimmer, 1975, for an explanation of the county classification system)."

Disabled. One problem with examining "disability" is that different studies employ different definitions. Studies examined for this paper used a variety of operational definitions. Wright (1980) succinctly summarized the problem of defining disability:

> The lack of a uniform nomenclature is troublesome in interprofessional communication and in the interpretation of legislation and agency regulations. It is particularly confusing that the words disability and handicap in rehabilitation are comparable to impairment and disability, respectively, in American medicine. (p. 69)

Nagi (1976, 1977) defined "disability" and "handicap" as they relate to function:

> Disability can be defined as the partial or complete incapacity to perform roles or tasks expected within the social environment as a result of an impairment. Temporary impairments such as acute illness or a broken arm are not thought of as disabilities.
>
> Handicap is a rather vague term and, perhaps, has

no medical meaning. Popular usage identifies a handicap as an obstacle imposed between a disabled person and the maximum function of that person.

SECTION II

Current Perspectives

SECTION II

A. Prevalence of Disability in Rural Areas

A substantial portion of the population of the United States resides in non-metropolitan and rural areas. According to a 1975 U.S. Census Bureau study of residential patterns in the U.S., 36% of our population lives in non-metropolitan areas with populations of less than 50,000 and 25% reside in communities with populations of 2,500 or less (Kane & Myers, 1979). With the U.S. population approaching 230 million (U.S. population estimated at 229,980,000 by the Census Bureau in October of 1981), current estimates from the National Center for Health Statistics (DHHS, 1980), indicate that over 8.5 million disabled individuals live in non-metropolitan and rural areas. Furthermore, these numbers are expected to increase due to recent changes in migration patterns in the United States. For the first time in the past 100 years, the rural to urban migration trend is being reversed.

Despite the large number of rural disabled Americans little is known about their problems or conditions. Much of what we currently know is simply inferential; that is, drawn from data collected for other purposes. For example, in a secondary analysis of the 1970 census data, the President's Committee on Employment of the Handicapped (DHEW, 1977b) reported on the disability rates of adults, age 16-64 across

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the 50 states. The six states with the highest disability rates were Arkansas (13.6%), Mississippi (12.5%), Oklahoma (12.2%), West Virginia (12.2%), Alabama (11.5%), and Kentucky (11.4%). These states are all heavily rural.

Many demographic, economic and policy changes have occurred since 1970, some of which may have been beneficial to the handicapped. To gain a more current national picture of rural disabled persons, data were examined from two sources: the 1972 Survey of the Disabled (Nagi, 1976) and the National Health Interview Survey (DHEW, 1975; DHHS, 1980).

Survey of Disabled

In 1972, a disability survey was conducted by Dr. Saad Nagi (1976) of the Ohio State University in cooperation with the Survey Research Center at the University of Michigan. The survey contained 6,493 personal interviews and focused on the effects of disability in two major spheres: work and independent living.

To examine work disability, Nagi used the Work Disability Index (WDI), an instrument designed for persons between the ages of 18 and 64. The WDI yielded three levels:

> No work disability. Individuals who work 36 hours or more per week in employment, housekeeping, or academic training and who report no limitations in their previous or present work.
>
> Almost 90 percent of Nagi's sample fell into this category.
>
> Limited in work roles and activities. Individuals

> who report limitations in carrying out their present work or who report job changes resulting from their disability.
>
> This category accounted for 4.4 percent of the sample.
>
> Vocational disabled. Individuals not in the job market because of disability or who are unable to perform housekeeping tasks or engage in academic training. This category includes persons engaged in part-time or occasional employment because of their disability.
>
> This category contained 6.3 percent of the sample.

The second sphere, Independent Living, was measured using the Independent Living Index (ILI) constructed for persons age 18 and over. The ILI was divided into four major levels:

> No limitation. Individuals reporting no significant problems in walking, using stairs, stooping, bending, kneeling, handling or fingering, reaching. Further, included individuals who did not report being either deaf or blind. (88.4% of the sample)
>
> Limited but independent. Individuals who reported major difficulties in walking, using stairs, stooping, bending, kneeling, handling and fingering, reaching, or those individuals reporting blindness or deafness but who required no assistance in community living. (6.3% of the sample)
>
> Needing assistance in mobility. Individuals needing help in mobility outside of the home; in addition to requiring assistance in housekeeping, work and shopping. (3.5% of the sample)
>
> Needing assistance in personal care. Individuals needing help in activities of daily living (i.e., dressing, eating, personal hygiene). (1.8% of the sample)

A number of other important results stemmed from Nagi's study:

> The incidence of disability among black respondents was more than twice that of white respondents.

High rates of work disability were reported among the widowed, separated, and divorced.

The disabled in work roles accounted for 28% of all problem drinkers.

The need for assistance in mobility and self-care increased dramatically for those over 75 years of age.

Twice as many women as men required assistance in mobility and self-care.

1975 National Health Interview Survey

This interview was conducted by the U.S. National Center for Health Statistics, DHEW, using a nationally representative sample of 45,825 households which included 116,289 people. Sampling units from all 50 states and the District of Columbia were included in the survey.

Of the 116,289 respondents to the Health Interview, 10.7% reported serious limitations to their usual activity because of one or more chronic conditions.[1] Of these, 63.8% resided in urban and suburban areas and 36.2% in non-metropolitan, rural areas. When compared with either the total population or with urban or suburban populations, rural areas showed a greater proportion of disabled individuals: 11.2% of urban population reported a handicap, 9.0% of suburban, and 12.3% of rural.

---

[1] ARR&TC examined data tapes containing survey results. The terms "handicapped" and "disabled" were not used in the survey; however, ARR&TC categorized individuals who reported a serious curtailment of activity because of one or more chronic conditions as "handicapped." Because of this limitation in the Health Interview, the descriptions which follow may be subject to some error but can serve to bring into focus certain problems faced by the rural disabled.

The disabled population (Table 1) was, on the average, much older than the total sample. This age pattern was even more striking among the rural disabled who had 65.2% of their population above 55 years of age, compared to the suburban (54.2%) and the urban disabled (58%).

The distribution of educational attainment (Table 2) for those health interview respondents over 17 years of age showed that over one-third (38.2%) of the disabled population had completed 8 or fewer grades of school while only 12% of the total population ended their education before high school. Again, this pattern was exaggerated among the rural handicapped. Almost 50% of the rural handicapped had an eighth grade education or less, while 37.5% of the urban and 29% of the suburban handicapped had 8 years or less of education.

Table 3 shows income disparity, one of the most serious problems faced by the handicapped. While only 15.0% of the total population had a family income of $5,000 or less per year (a figure that in 1975 was approximately the federal poverty level for a family of four), 33.3% of the disabled earned incomes lower than $5,000. And once again, the pattern was stronger for the rural disabled (41.8%) than for the suburban (21.6%) or for the urban disabled (36.2%).

1980 National Health Interview Survey

More recent, yet less extensive, information from the U.S. National Center for Health Statistics (1980) provides a

Table 1*

Age of Respondents to the National Health Interview, 1975 by selected categories

	Under 17	17-54	55+
Disabled	5.4	35.3	59.3
Rural disabled	4.0	30.8	65.2
Suburban disabled	6.6	39.2	54.2
Urban disabled	5.6	36.4	58.0
Total	30.6	49.8	19.6

Table 2*

Education of Respondents Over 17 Years of Age to the National Health Interview, 1975 by selected categories

	Years of School		
	0-8	9-12	13-16+
Disabled	38.1	40.5	13.7
Rural disabled	47.0	36.9	10.0
Suburban disabled	29.0	44.5	17.7
Urban disabled	37.5	40.5	13.5
Total	12.1	37.5	18.5

Table 3*

Family Income of Respondents of the National Health Interview, 1975 by selected categories

	Under $5,000	$5,000-9,000	$10,000+
Disabled	33.3	26.8	32.1
Rural disabled	41.8	27.1	23.9
Suburban disabled	21.6	26.1	43.6
Urban disabled	36.2	27.3	29.1
Total sample	15.0	21.6	56.3

*Source: Unpublished data from the 1975 National Health Interview Survey, U.S. Department of Health, Education, and Welfare.

similar picture. The sample was nationally representative and contained approximately 39,000 households, which included over 103,000 individuals. As in the 1975 survey, sampling units from all 50 states and the District of Columbia were included in the survey.

The only data available for comparison with the 1975 survey were population figures which continued to show a gap between the proportionate number of rural and urban disabled. Data showed that 10.37% of the urban population had serious limitations, compared with 12.75% of the rural non-farm population, and 12.6% of the rural farm residents.

SECTION II

B. Barriers to the Rehabilitation of the Rural Disabled

Many barriers to the rehabilitation of rural disabled persons are described in the literature (American Hospital Association, 1977; Amos & Grambs, 1968; Bitter, 1972; Bitter & Kunce, 1972; Clark, 1973; Columbus & Fogel, 1971; Cook, 1969; Cook, Ferritor, & Cooper, 1981; Ford, 1978; Goodyear, Bitter, & Micek, 1973; Hansen, 1972; Hassinger & Whiting, 1976; Hulek, 1969; Hutchinson, 1970; MacGuffie, Janzen, & McPhee, 1969; Myers, 1974; Nolan & Schwartz, 1973; Roemer, 1968a; Schalock, 1979; Talkington, 1971; Tamblyn, 1971; Thoreson, 1964). The barriers most often cited are these: economic, employment, health, education, transportation, culture, and ethnicity. In this section, an overview of these major barriers is presented and their ramifications for the rehabilitation of rural disabled persons are discussed.

Economic

Rural areas of the United States seriously lag behind urban areas in objective measures of socioeconomic status and level of living. For example, in 1970 the median family income in metropolitan areas was $11,203; for non-farm families in non-metropolitan areas $8,881; and for farm families in non-metropolitan areas $6,819 (U.S. Department of Commerce, 1972).

This lower economic level in rural areas causes difficulties for local governments, particularly in the area of social and health-related services. Rainey and Rainey (1978) cite a substantial amount of evidence showing that rural areas have more difficulties than urban areas of moderate size in paying for adequate levels of public services. Causes such as low population density deter local governments from providing social services to the rural poor and disabled. Per capita costs of delivering these services is frequently higher in rural areas because operating expenses must be shared by fewer people. Low population density also contributes to a low tax base, limiting the amount of funds for social and health-related services. Because of these limited funds, local government leaders must set priorities on spending. Too often social and health-related services are not "Number 1" on their list of community priorities.

Employment

During the past 50 years, as a result of technology and mechanization, there has been a drastic reduction in farm-related employment in rural areas. Most rural people are not farmers; only 4 million of the nearly 60 million persons in rural America derive a major portion of their personal income directly from agriculture. The majority of the remaining rural workers are employed in small businesses; many of them marginal, some seasonal, and most offering fewer benefits than urban businesses. Although industrial development has helped compensate for the loss of agricultural employment, it has not been sufficient to support the needs of rural people, particularly the disabled.

Clark (1973) completed a two-year study in rural North Dakota attempting to correlate 27 variables from initial test data on 40 retarded adults with their ultimate job performance. She found no significant predictors for job success. However, she did suggest that in rural, sparsely populated areas, the existing job market, the willingness of employers, and the lack of competition in low level occupations were more important in successful rehabilitation than more comprehensive assessment or better classification of jobs.

Unemployment in rural areas, Tamblyn (1971) states, is much greater than in the rest of the country. He goes on to say that, "rural underdevelopment also is heavier than the national average, due in large part to the seasonal nature of much of the available work and to the general inaccessibility of full-time remunerative work."

One of the most significant problems rehabilitation counselors face in providing services to rural clients is the lack of employment opportunities in rural areas (Metzler 1959). MacGuffie, Janzen, and McPhee (1969) conducted a survey of counselor opinions of employment opportunities in rural communities. Results of the survey indicated that counselors felt that for a majority of their clients, employment in rural areas was limited. MacGuffie's study concluded that the majority of rural rehabilitation clients anticipate the need to move to urban areas to gain employment after rehabilitation.

Health

The National Health Interview Survey (DHEW, 1977a) found that a majority of Americans perceived themselves as being in "good" or "excellent" health. Despite this apparent optimism about health status, a good state of health is not enjoyed equally by all Americans. Numerous research studies and health professionals have recently called attention to the inequities that exist in the geographical distribution of health-care in America.

Studies and reports have cited problems that appear to be responsible for the serious inadequacies experienced in rural health care (Davis & Marshall, 1975; Green, 1980; Hardy, 1973; Hassinger & McNamera, 1971; Roemer, 1968b). Nolan (1973), who provides the most succinct summary, states that the problems include:

> isolation by geography; weather and poor roads; population dispersion; weak public and private institutions; absence of transportation; unemployment; inadequate housing; discrimination; inadequate water supply; absence of waste disposal; severe shortages of health personnel; absence of health-care facilities; poor educational systems; impassable roads; barriers to qualifying for existing benefits of public programs; inadequate welfare services; environmental pollution; adverse land use, such as strip mining and uncontrolled timbering; attitudes of despair and depression; and maldistribution of health personnel (p. 154).

Two major health care problems for the rural disabled are the severe shortage of health-care personnel, and the absence of adequate health-care facilities in rural areas.

A major problem in establishing an adequate rural health-care system is directly related to attracting and retaining health professionals, particularly physicians, in rural areas (Davis & Marshall, 1975). The most recent picture of the distribution of physicians and dentists in America, indicate that non-SMSA areas have the lowest ratio of physicians and dentists to population (Table 6). Reasons for this include professional isolation; limited income as compared with urban professionals; overwork as a result of too few professionals; a lack of cultural, recreational, educational, and housing facilities many professionals are likely to require; limited laboratory and medical care facilities; and few opportunities for social and professional mobility.

Although the National Survey and Construction Act of 1946 (Hill-Burton) provided grants to the states to subsidize hospital construction in areas of greatest need, particularly rural areas, there is still a paucity of primary health-care facilities in rural communities. There are still many rural communities without medical facilities and often residents must travel great distances to receive adequate medical care (Bernstein, Hege, & Farran, 1979). Bernstein, Hege, & Farran discuss in detail the many problems

Table 6

Primary Care Physicians, 1973, and Practicing Dentists, 1974, by Location

(Rate per 10,000 population)

Location	1973 population (thousands)	Active Physicians, 1973[1]	
		Total	Licensed dentists 1974[2]
United States..........	209,517	14.7	5.4
Within SMSA...........	152,875	17.4	6.0
Large SMSA	86,248	20.0	6.7
Core counties........	59,789	23.3	6.7
Fringe counties......	26,449	12.6	6.8
Medium SMSA...........	48,389	14.4	5.2
Other SMSA............	18,238	13.5	4.8
Outside SMSA..........	56,642	7.4	3.7
Adjacent to SMSA.......	29,380	7.2	3.6
Urbanized...........	13,306	9.1	4.4
Less urbanized.......	13,696	5.9	3.2
Thinly populated.....	2,378	3.6	2.2
Not adjacent to SMSA...	27,262	7.6	3.7
Urbanized...........	8,669	11.1	4.4
Less urbanized.......	14,088	6.6	3.6
Thinly populated.....	4,505	3.9	2.8

---

[1] As reported by physicians.

[2] As reported by State licensing boards.

Source: G. Roback, Distribution of Physicians in the U.S. 1973. Copyrighted by American Medical Association, 1974.

faced by rural communities wishing to construct facilities and recruit trained medical staff.

Education

Within the last century, the educational system in rural America has come a long way from the "one room, little red schoolhouse." However, rural people are still less likely to have finished high school than their urban counterparts. Many rural communities find it difficult to provide specialized services and a wide range of courses typically found in urban areas. Preschools and kindergartens are generally not available. Little adult or vocational education is provided, although there has been some improvement in this area (Tamblyn, 1971).

With the advent of the Education for All Handicapped Children's Act of 1975 (PL 94-142) (U.S. Congress, 1975), new dimensions were added to the education of disabled children, particularly those children living in rural communities. A recent study of the National Rural Research and Personal Preparation Project examined the difficulties that rural communities experienced in attempting to carry out the mandate of PL 94-142. The predominant difficulties cited were recruiting and retaining qualified staff, community resistance to change, long distance between schools, suspicion of outside interference, cultural differences, terrain, and low tax base (Helge, 1981).

Transportation

Transportation has been repeatedly cited as one of the most important barriers for disabled people in rural areas (Amos & Grambs, 1968; Myers, 1974; Revis & Revis, 1978; U.S. Administration on Aging, 1975; U.S. Department of Transportation, 1976a, 1976b; Van Vechten & Pless, 1976). Although metropolitan areas usually have mass transit or public transportation systems, these services are virtually non-existent in rural settings. As a result, rural people are almost totally dependent on private vehicles. Often the rural disabled are unable to drive because of age, disability, or low income and must rely on others for their transportation needs. Consequently, the rural disabled experience repeated difficulties in attaining the basic goods and services in their everyday lives.

Revis and Revis (1978) conclude that four basic factors and their interactions account for the major transportation problems of the disabled.

> Low income places serious restrictions on the mobility of disabled individuals to the extent that they are unable to purchase needed disability-related equipment or service to facilitate travel.
>
> Transportation service deficiencies further reduce mobility as reflected by transportation services that are either not available, available in the wrong places at the wrong times, or operating too infrequently to be of any relevance.
>
> Rural isolation compounds the problem of mobility for those disabled persons living in rural areas. Frequently social and/or health services cannot be reached due to lack of transportation facilities.

> Design problems limit mobility resulting in inaccessible or inadequate transportation systems. These include both vehicles and fixed facilities such as terminals, bus stops, and other transportation installations.

It is generally conceded that lack of public transportation and the need to drive long distances are barriers to vocational rehabilitation service delivery. Mannino, Rooney, and Hassler (1970) suggest 40 to 60 miles is the maximum effective mileage from home to treatment, and Janzen, MacGuffie, Isreal, and McPhee (1969) and Bowman and Micek (1973) found that the miles a rehabilitation counselor drove to provide services limited direct contact with clients and influenced the counselor/client relationship. Hansen (1972) commented that the travel associated with the delivery of services in rural areas placed rehabilitation counselors in the role of the rural itinerant preachers limiting their effectiveness. In contrast, Bolton (1974) found that counselors who travel the most had the highest percentage of rehabilitation closures.

Rural-Urban Differences in Attitude and Behavior

Social scientists differ about the importance of the rural-urban distinction for understanding attitudinal and behavioral differences in contemporary American society. Some argue that, while a rural ideology may have existed historically, powerful forces such as industrialization have largely eradicated residence distinctions. Opponents of this perspective argue that, while the strength of traditional rural values may have waned with time, rural-urban differences remain important.

The magnitude of rural-urban differences in attitude and behavior vary according to the way that "rural" and "urban" are defined. Usually the largest differences appear when farmers or rural-farm people are compared with the rest of the population. Although there is not complete agreement on the traits comprising rural culture, there are some characteristics which are commonly used to describe rural society. Most of the literature portrays rural culture as provincial, relatively prejudiced, ethnocentric, isolationist, intolerant of deviance, opposed to civil liberties, distrustful of people, slow changing, traditionally religious, work-oriented, favorable to early marriage and high fertility, and somewhat fatalistic (Glenn & Hill, 1977, pp. 354-55).

At the other extreme, urban culture is portrayed as more tolerant of deviance, sexual morality, racial, ethnic, and political differences. The urban culture is open to new experiences and is less passive and fatalistic.

Socioeconomic factors may mediate certain traditional rural-urban differences. Similarly, place of residence during adolescence may be a better predictor of attitude than current place of residence (Miller & Luloff, 1981; Glenn & Hill, 1977). Degree of rurality is a source of attitudinal variation, making it more useful to view the urban-rural distinction as a continuum rather than a dichotomy.

No studies have been specifically directed toward examining the effect of rural attitudes and values on the delivery of rehabilitation services. However, attitudes toward disabled people, toward accepting rehabilitation services, and toward work itself may affect the provision of rehabilitation services. As Cook (1969, p. 99) points out, "each individual depends on the culture to interpret the significance of illness, disability, work, etc., and this to a large extent seems to determine how he sees himself, feels about himself, and implements his role." Cook goes on to suggest that three major factors appear to affect disability from a cultural context: (1) the devaluation of disabled persons in American culture; (2) the culturally defined significance of specific illnesses or diseases; and (3) the use of illness or disability as a psychological adjustment mechanism. Thoreson (1964) also comments that a number of factors operate in the psychosocial meaning of disability, including the idea that illness is sometimes a cultural safety valve offering individuals the opportunity to withdraw from the mainstream of life in a socially acceptable way.

It must be remembered that vocational rehabilitation is essentially an urban middle-class concept primarily administered by professionals from urban middle-class areas. As Lowery (1980, p. 27) emphatically points out, urban techniques, values, concepts, and jargon are, "so foreign to rural people that they simply boycott such (rehabilitation) services as long as possible and are considered either poorly motivated or labeled in some other way as failures."

In the spring of 1978, a federally funded regional training conference examined a number of issues related to cultural factors in rehabilitation (Steinberg, 1979). This conference identified several important needs, including the following: (1) the need to establish separate standards to deal with the unique aspects of cultural entities; (2) the need for additional financial and time allotments for rehabilitation that take into consideration delays due to culture, language, transportation, and other barriers to rehabilitation; (3) the need for continuing training for indigenous service providers; and (4) the need for counselor training programs to integrate cultural issues into curricula.

Ethnicity

Four ethnic subpopulations living in rural areas have been identified as having critical health and rehabilitation related needs (Ford, 1978):

> American Indians. The American Indian is the most rural of all our ethnic groups and is also the most economically deprived. He is far from being brought into the mainstream of our economy and society. Infant mortality rates are high and life expectancy is far below the U.S. average; other health problems such as alcoholism and tuberculosis are endemic. Because native Americans tend to be located in the most rural and most inaccessible parts of the country, health delivery systems are costly and less effective.

Southern Rural Blacks. Next to the American Indian, the economic condition of the southern rural black is probably lowest. Housing is often as bad as that of the American Indian. Educational attainment, especially among older rural blacks, is low. Persisting patterns of discrimination have meant that the black has had to take second best in medical care. Folk knowledge of health maintenance and preventive medicine prevails. Nutrition has traditionally been poor. Infant mortality is twice as high as for rural whites. Contagious diseases are prevalent. Average expectation of life is significantly lower than for whites. Given high rates of outmigration of the able-bodied young people from the region, physical disability tends to be high among the remaining families. The southern rural black, in terms of numbers and economic deprivation, is one of the most significant subpopulations in the rural United States having critical health needs.

Mexican Americans (Chicanos). A third major rural subpopulation that could be expected to have critical health needs is the Mexican American. Educational attainment is unusually low, families are large, economic deprivation is high, and there is an added barrier - a difference in language and culture. As a result, the Chicano tends to be cut off from modern professional medical care. Folk medicine has been relied upon extensively in rural areas.

The low income position of the Mexican American is compounded by fatalistic views of health. Traditionally, illness has been seen as coming from God or even evil spirits - something to be borne rather than avoided. Although there appear to be critical health needs among rural Chicanos, there has been little investigation of health problems. Available data are highly inadequate.

Appalachian and Ozark Whites. Historically the Appalachians and the Ozarks have been among the more inaccessible and culturally isolated parts of the country. Incomes of residents have been characteristically low, as has been educational attainment. Disability tends to be high in what is a disproportionately aged population. Health needs are critical and delivery systems are underdeveloped (pp. 32-33).

SECTION II

C. Service Delivery Approaches

The delivery of human services in rural areas, as discussed in the previous subsection, is often plagued by problems: lack of transportation, few qualified personnel, local attitudes towards outsiders, client and community attitudes towards obtaining assistance from "welfare" agencies, etc. (Hutchinson, 1970). In addition, rehabilitation service providers have a special set of problems: lack of employment opportunities for clients in rural communities, employer prejudices towards hiring the handicapped, and client resistance towards relocation for skill training and employment (Bitter, 1972; Clark, 1973; Hulek, 1969; MacGuffie, Jansen, & McPhee, 1969).

Two distinct strategies have been undertaken to alleviate these problems. One approach has been through the expansion of traditional service delivery programs; the second has been to develop innovative, non-traditional service delivery systems and methods. In this section, a variety of methods and approaches will be discussed, focusing on their success or failure in meeting the needs of the rural disabled.

Expanded Traditional Vocational Rehabilitation Services

A number of research and demonstration projects have been funded by the Rehabilitation Services Administration to provide and examine the effects of traditional rehabilitation services in predominantly rural areas (Achievement House, 1968; Ayers, 1967; Cook, 1976; Kentucky Bureau of Rehabilitation Services, 1969; Maine's Pine Tree Society for Crippled Children and Adults, 1962; McCollum & Dickerson, 1972; New Mexico Society for Crippled Children and Adults, 1960; Saranac Lake Rehabilitation Guild, 1961; Wisconsin Division of Vocational Rehabilitation, 1969). These short-lived projects enjoyed varying degrees of success and, as Cook, Ferritor, and Cooper (1981) pointed out, many "...were either so provincial as to have little generalizability, or so general as to limit service improvement (p. 56)."

In an effort to demonstrate the effectiveness of an intensive and extensive application of traditional rehabilitation services, Wood County, Wisconsin, was provided with sufficient staff and funding to serve all of the disabled persons in the predominantly rural county (Wright, 1967). The successful results of the Wood County Project have been reported in a number of monographs and journal articles (Wright, Reagles, & Butler, 1970). Through this type of saturation approach, it was found that traditional services could improve the employment and health status of the rural disabled persons, regardless of the handicapping condition.

A similar approach in eastern Kentucky (Kentucky Bureau of Rehabilitation Services, 1969) attempted to demonstrate the effectiveness of comprehensive rehabilitation services--medical, vocational, psychological, and social--to the severely disabled living in an isolated, mountainous, and depressed area of Appalachia. The results of this project indicated that physical restoration and related services were found to improve the overall health of clients served, but, because of the lack of employment opportunities in the area, the vocational goals of the project were not realized.

Maine's Pine Tree Society for Crippled Children and Adults from 1959 through 1962 (1962), expanded its services to form a comprehensive rehabilitation facility. They accomplished this by: (1) adding to and modifying the existing building; (2) developing a professional rehabilitation team; (3) organizing a work evaluation unit; and (4) establishing working relationships with state and private agencies serving the disabled. Their growth increased the number of rural people served, broadened the areas served, and increased the facility's use by Maine's Division of Vocational Rehabilitation.

The Saranac Lake Rehabilitation Guild (1961) (upstate New York), established a three-year program for developing, demonstrating, and evaluating methods for providing comprehensive rehabilitation services to the rural disabled. After serving 861 clients, the following conclusions were drawn: (1) an integrated comprehensive rehabilitation center is an effective means of assisting rural disabled individuals; (2) the integration of rehabilitation services with medical treatment is facilitated by indoctrinating local physicians and developing procedures in hospital settings; (3) the evaluation clinic represents an effective vehicle for developing the team approach for assisting rural disabled people; (4) local rehabilitation resources can be coordinated to provide maximal service; (5) a rehabilitation nurse/counselor is ideal for this coordinating function; (6) an important integrative and developmental role can be assumed by the Department of Vocational Rehabilitation; and (7) financial responsibility must be assumed by the local community.

In a West Virginia (Myers, 1974) program, an office with a counselor and a secretary was opened in two rural counties. Emphasis was placed on the delivery of services through interagency cooperation, but one of the two county offices was later closed because of too few clients. This was directly attributed to lack of referrals, the older nature of the population, and local attitudes about seeking help. The remaining county office, with adequate community support, was able to exist even though the area was sparsely populated. Lack of public transportation, however, remained the major problem.

Several projects over the last two decades have improved the employability of severely disabled persons by adding services and training opportunities to existing sheltered workshops. In Pulaski County, Arkansas, severely handicapped rural individuals were provided with transportation to a workshop or had materials brought to them so that they could be trained in several different job tasks. After training, raw materials were delivered to clients' homes and later finished products were collected to be sold by local stores. The project proved to be very effective at making highly motivated individuals self-supporting (Arkansas Association for the Crippled, 1960).

The Austin Achievement Corporation (Minnesota), in a two year effort to improve job placement services, tried contracting with local businesses to provide unskilled and semi-skilled jobs (Ayers, 1967). The effort included job training and evaluation in the workshop, contract labor placement outside the workshop, supportive social work for family and client, and community education. Jobs were found with rural businesses and twenty-five percent of the workshop's caseload was placed in competitive employment over the three years of the project.

Another project involving the modification of the workshop program for mentally retarded adults was attempted in California by the Achievement House (1968). Intensive training in a limited number of tasks was used as part of a two-month evaluation. It was found that successful placement was dependent not only on training, but also on the success of functional living programs and personal counseling.

A statewide project sponsored by the University of Vermont (Knowles, 1964) was designed to locate disabled homemakers in rural areas, evaluate their needs, and provide training in the home to improve their functioning. Initial screening was completed by vocational rehabilitation counselors and the training was accomplished by staff from the University's department of home economics. The project located 407 disabled homemakers with 100 of them in need of the services described in Table 5.

In summary, almost all of these programs demonstrated that it is possible to extend rehabilitation services into rural areas and that there is need for the services offered: counseling, medical and psychological evaluation, consulting, vocational training, and job placement. Traditional methods of service delivery can be effective if staff and funding are adequate.

Non-Traditional VR Services

Indigenous Volunteers and Service Providers. Hutchinson states (1970) that, "...manpower needs in social services have never been adequately met. This has been especially true in rural areas, where there has always been a severe lack of professional manpower (p.40)." One technique judged as vital to effective rural service delivery throughout the literature (Baney, 1968; Beasley & Parris, 1969; Grober & Barber, 1976; Davis, 1968; Hansen, 1972; Kelley, Gueron, & Rawlings, 1977; Knauff, 1972; Lucas & Wolf, 1968; Nolan & Schwartz, 1973; Reiff & Reissman, 1965; Stewart & Crafton, 1975) has been the use of indigenous paraprofessionals, outreach workers, and aides. These and other studies have shown

Table 5

Rural Disabled Homemaker Needs

Meal Preparation	68%
Management of time, energy and money	61%
Laundry	56%
Architectural hazards	47%
Manipulative techniques	38%
Child care	20%
Marketing	16%
Lack of homecare knowledge	11.4%

Source: Knowles, 1964

that the use of indigenous volunteers and service providers can often serve as an avenue for overcoming cultural, communication, and fiscal barriers often experienced by human service agencies in rural settings. Mykut (1979) comments that, "...use of paraprofessionals from the local population not only helps to defray the cost of service, but affects favorably the frequency of use of the services, the quality of services, and the degree of trust placed in the service by clients."

Over a three-year period (1964-1967), the Wyoming Division of Vocational Rehabilitation conducted a research and demonstration project (Kelso, 1969) to discover the usefulness of employing, on a part-time basis, a number of aides to assist rehabilitation counselors in bringing better services to the rural disabled. Some of their major findings follow:

- Aides appeared to be useful to counselors in rendering more and better service to the disabled in a sparsely settled area.
- Aides were influential in providing vocational rehabilitation services to a broader range of disabilities than had been the case prior to the advent of aides.
- Aides allowed counselors to spend more time and effort with more seriously disabled clients and to deal with problems that they previously lacked time to consider.
- Clients with aides assigned to them were seen two or three times more often than those clients without aides.

In summary, it appears that the use of indigenous volunteers and service providers is a positive force in improving vocational rehabilitation services to the disabled in rural areas.

Use of Mobile Units. Mobile units that provide health and related services have been employed extensively in rural areas during recent years. These units have been used for a variety of purposes including medical diagnostics (such as mobile X-ray units) and vocational and psychological evaluations. Mobile units overcome individual client's transportation problems, decrease the amount of time needed to determine the client's rehabilitation needs, and overcome the lack of facilities and trained personnel in rural areas.

The mobile unit has been used in several instances with excellent success. In one instance, the Oklahoma State Vocational Rehabilitation Division (1969) received a research and demonstration grant to demonstrate the effectiveness of a specialized mobile rehabilitation team in providing comprehensive evaluations of severe physically disabled or emotionally disturbed clients at the community level. The team consisted of a psychiatrist, a clinical psychologist, and a psychiatric social worker. Clients' physical and mental health improved after participating in this project providing evidence of the usefulness of mobile units in serving clients in rural areas.

Hutchinson (1970) reported three additional examples of providing services to handicapped individuals with mobile units:

> In Maryland, an Office of Economic Opportunity demonstration project (The Human Resource Development Center (HRDC)) is utilizing mobile vans for multi-purpose uses and outreach services. In Alabama, a medically oriented mobile unit has proven effective. This unit, staffed with a physician, nurse, social worker, and rehabilitation counselor, moves from community to community providing medical evaluation, some limited medical treatment, as well as social and vocational services.
>
> The Georgia Rehabilitation Agency has developed a mobile laboratory, especially modified for use as a vocational evaluation unit. It serves an area to a distance of approximately 50 miles from Albany and its purpose is to determine as expeditiously as possible the potential for work that rehabilitation clients possess. This laboratory serves as an arm of large stationary facilities (i.e., schools), and as such would overcome problems that would be faced by mobile laboratories operated as independent units. The unit is designed to stay on a school campus for one school quarter (nine weeks) before moving to another location. It will accommodate six clients in evaluation or adjustment training at one time, or 50-60 clients per year (p. 42).

Professional Teams. Although not specifically developed to serve rural clients, the use of professional rehabilitation teams has greatly improved the timeliness of service delivery to the rural disabled. Professional teams have been used primarily to decrease the amount of time used in the initial diagnosis of the VR client. Team approaches that have been used include Concentrated Assessment and Diagnosis in Rehabilitation Entrance (CADRE) (Reagles, Wright, & Chope, 1975), the Rehabilitation Initial Diagnosis and Assessment of Clients (RIDAC) (Bolton & Davis, 1979), Project Expedite (Goldston & Hefley, 1975), and the Rehabilitation Services Team (RST) (Hutchinson, 1971). The basic premise of using these team approaches was that delays in the provision of VR services often result in clients "dropping out of the system." Thus, if rapid intake and initial diagnosis are provided, clients are less likely to decline services.

Transportation Systems. Recently, there has been an explosion of transportation programs to meet the needs of the disabled and elderly. This growth has been primarily stimulated as a result of recent Federal legislation in the areas of rehabilitation and transportation. This legislation, accompanied by support from consumer-led private organizations, has resulted in a variety of national, regional, state, and community based transportation programs (Brail, Hughes, & Arthur, 1976; Revis & Revis, 1978; U.S. Department of Transportation, 1976a).

Advances in transportation for the disabled have been principally in urban areas and have consisted of modifications to fixed route transit systems (such as public buses) and increased usage of demand-responsive transportation services (such as Dial-A-Ride). Specialized transportation services for the disabled is a growing industry, but remains costly.

In rural communities, growth of transportation systems for the disabled has been limited. The major advantages to a regional system all appear to be financial, resulting in increased operating efficiency. Conversely, the disadvantages are longer travel time and longer waits for service

(Bine, 1978). The major dilemma is one of "dollars versus service."

Brail et al. (1976) provide a graphic presentation of the range of strategies for transportation alternatives to serve the disabled from the relatively simple, inexpensive approaches to the more complicated programs (Figure 1). They also provide a detailed description of a variety of transportation programs in the appendices to their book.

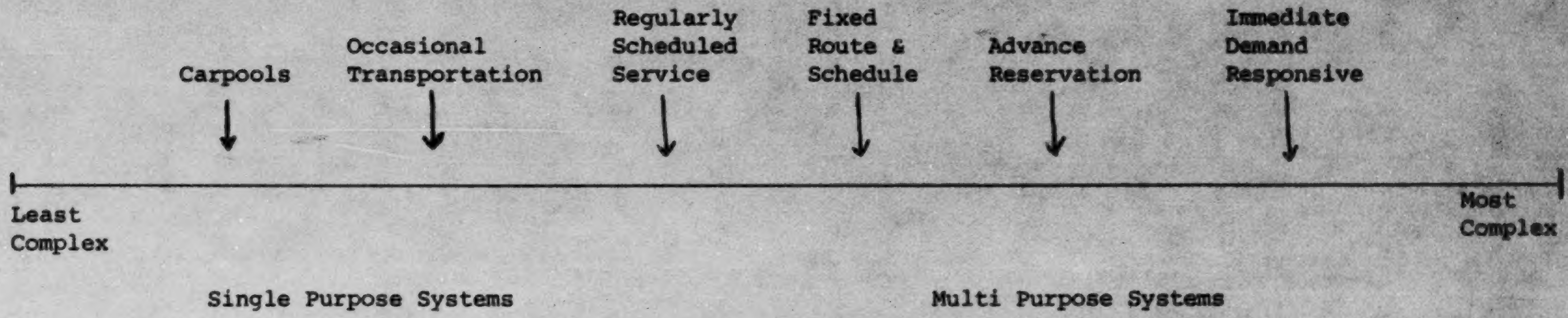
Rural Health Services. To assist in alleviating monetary, geographical, and attitudinal obstacles of rural health delivery, a variety of federal and state governments as well as numerous professional bodies--such as medical schools and private foundations--are developing, implementing, and assessing approaches to rural health.

Among the more recent innovative projects to assist the rural disabled are federally-funded programs, such as health clinics that provide medical diagnosis, treatment, and medication to individuals who did not have access to medical care previously (Nolan & Schwartz, 1973). Other projects, as mentioned earlier, consisted of transportation for rural disabled residents (Revis & Revis, 1978), or in some instances, mobile units to travel to those individuals with health-care needs (Hutchinson, 1970).

Medical schools have developed health clinics in rural areas which have served as incentives for newly trained physicians to enter rural practice. In addition, national and

FIGURE I

ALTERNATIVE TRANSPORTATION SYSTEMS FOR THE DISABLED


Carpools
Occasional Transportation
Regularly Scheduled Service
Fixed Route & Schedule
Advance Reservation
Immediate Demand Responsive
Least Complex
Most Complex
Single Purpose Systems
Multi Purpose Systems

state medical associations have offered incentives to physicians who enter rural practice. Local communities have also been offered assistance in planning health centers by medical associations (Matthews, 1974).

Private foundations have also helped support the development of innovative health-care service delivery programs among the most notable of these are the W.K. Kellog Foundation and the Robert Wood Johnson Foundation (Sheps & Bachar, 1981).

There are a number of federally-sponsored programs, as outlined by Sheps and Bachar (1981), that stimulated the provision of quality health-care services to the rural disabled. They include the Appalachian Health Program, the Migrant Health Program, Community Health Centers, Health Underserved Areas, The Rural Health Initiative, and the Area Health Education Centers Program.

In conclusion, it should be noted that although there are many federal, state, and private organizations which help provide health-care services to the rural disabled, no single strategy or plan exists. Many services may be provided in one geographical area, while other areas remain in need.

Special Education Programs. Since the passage of the Education for All Handicapped Children Act (PL. 94-142) (U.S. Congress, 1975), a great deal of activity related to meeting the special educational needs of handicapped children has occurred. Although there have been some changes in rural and sparsely populated areas, this activity has primarily focused on urban school systems. This is, in part, due to the difficulties of transferring models for special education developed for urban areas to rural areas (Jordan, 1966).

Sanche (1972) outlined some of the major emphases placed on special education projects during the late 1960's and early 1970's. The Four Corners Mental Retardation Project used local, bilingual, multi-cultural paraprofessionals to communicate to the predominantly Indian and Spanish target population with greater success than outside professionals. Two models from the 1971 Memphis Conference on Emerging Models of Special Education for Sparsely Populated Areas revealed that often the initial stimulus for action, however, must come from outside the target area. In Virginia, the Powhattan Project, the Virginia Commonwealth University and Powhattan County School District developed a model special education and counseling service. Another model project showed that Parental involvement and participation must be incorporated for early education of multiply handicapped children to achieve a high degree of success.

In another program, described by Hughes (1971), efforts were made to establish a range of psychological, speech and hearing, homebound, home visitation, in-service education and reading services for all school children in a rural Nebraska community.

In an effort to examine the major and most common administrative designs for special education, Weatherman (1971) describes four types: (1) single district; (2) host district or cooperative; (3) service agency model; and (4) formal intermediate district. He concludes that some variation of the intermediate district seems most appropriate for rural areas.

Since the early 1970's, there have been numerous research projects, as well as a variety of innovative approaches, attempting to meet the special education needs of rural children. One notable program has been the effort of the Outreach Division of the Exceptional Child Center in Logan, Utah. The Center has been concerned with the development and dissemination of packaged, field-tested materials for use by parents and teachers to help children learn basic academic, self-help and behavioral management skills, and to help paraprofessionals teach independent living skills to adult and aged handicapped individuals (Latham, 1979).

Several projects, funded primarily by the Bureau of Education for the Handicapped, implemented innovative services to handicapped children. Most of these projects were regional, dealt with educational concerns, and considered rural handicapped children a special population. Cordell (1978) suggested methods parents might use in seeking special schooling for disabled children in rural areas. Baldwin (1976) described a social service delivery model for rural multiply handicapped pre-schoolers which included provision for individualized parent programs for each family. Richards (1976) summarized a project to provide home preschool education to handicapped Appalachian children. The recommendations addressed administration, service, and parent goal-setting. The 1975 ESEA Title III report summarized a four-year project to develop a service center for rural handicapped children. Underlying issues affecting the project were the social isolation of communities served, parent-community involvement in the project, and identification of the handicapped children to be served. The Cooperstown (New York) Project (DHEW, 1976) developed special procedures and a mobile resource center to upgrade service delivery to rural handicapped Head Start participants. The need for special services to this rural handicapped population raised two important concerns: implied lack of public awareness of the special needs of the handicapped and the geographical restrictions inherent in rural areas. McKee (1978) overviewed five papers covering the Macomb (Illinois) home based program for rural handicapped infants and toddlers. This project fostered public awareness of the importance of early intervention, described a referral system, and discussed methods for working with health-care personnel. Bagnato (1979) developed a format for developing assessment and intervention procedures to follow-up initial screening of preschool handicapped children in rural areas. Competency-based assessment approach is linked to an individualized plan whereby instructional techniques are personalized to maximize skill acquisition. Hofmeister and Atkinson (1976) developed an innovative service delivery model for rural severely handicapped children. Their telecommunication-based system is designed to reduce professional personnel while providing quality services to the homebound. The system makes use of behavioral instructional packaging and requires parents to be trained in teaching methods, correction procedures, and behavior management procedures. Parents may call the "Homebound Handicapped Resource Center" and speak with professional consultants.

Finally, two recent reports are directed toward implementing PL 94-142 in rural areas. Carlson and Nevin (1978) remarked on the need for identifying and rank ordering the special educational competencies required of rural educational administrators to implement PL 94-142 mandates. Laub (1979) reported on procedures for identifying preschool rural handicapped children. This project developed a screening test to assess children's developmental capabilities and gave suggestions for organizing a screening campaign.

SECTION III

Current Needs

SECTION III

A. Major Needs of the Rural Disabled

No comprehensive needs assessment of the rural disabled exists. Further, there is no ongoing system for the collection of data on the characteristics or needs of disabled individuals residing in rural areas. The information presented in this section is, at best, a piecemeal picture of the needs of rural disabled people based on inferences drawn from studies associated with the needs of urban disabled persons or the national needs of disabled persons without specific reference to the rural disabled. In 1969, Janzen and his associates stated that, "research in the area of rural rehabilitation has been of a fragmented nature and today we still have no well established organized theory as to how to help the rural disabled (p. 1)." Today, in 1982, the picture has not substantially changed.

This section will report the results of several significant national and state needs assessments and comment upon their relevance to the needs of rural disabled persons.

National Surveys

Several national surveys that relate to disability have been conducted including the 1966 Social Security Survey of Disabled Adults (DHEW, 1967-70), the 1972 Survey of Disabled (Nagi, 1976), recent Health Interview Surveys by the U.S.

National Center for Health Statistics, and the 1980 Census.[2] However, the majority of these surveys simply estimated the prevalence of disability in the United States (their findings are discussed in Section II, A). The single national study that attempted to examine in detail the needs of the most severely disabled was the Comprehensive Needs Study conducted by the Urban Institute in 1975.

Comprehensive Needs Study. In attempting to assess the needs of the most severely handicapped, the Urban Institute conducted surveys in three areas. First, extensive data were collected on vocational rehabilitation cases closed as non-rehabilitated due to the severity of their handicapping condition. The study included information on approximately 900 clients from 10 states including Colorado, Connecticut, Georgia, Idaho, Indiana, Maryland, Minnesota, New York, Ohio, Oklahoma, North Carolina, and Washington (12.4% were identified as rural).

The second area was an analysis of the characteristics of those clients who rarely enter the VR system. To locate these individuals and to examine their needs, a survey was conducted at 10 comprehensive medical rehabilitation centers: the Institute of Rehabilitation; New York University Medical Center; Rancho Los Amigos Hospital in California;

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[2] 1980 Census Questionnaire contained an item regarding activity limitations due to chronic illness, however, the data have not been tabulated to date.

Rehabilitation Institute of Chicago; Tufts New England Medical Center in Boston; Spain Rehabilitation Center in Alabama; Texas Medical Center, Texas Institute for Rehabilitation and Research in Houston; Department of Rehabilitation Medicine, University of Washington Hospital in Seattle; and Woodrow Wilson Rehabilitation Center in Virginia.

The third area involved a mailout survey to approximately 1,000 state vocational rehabilitation (VR) staff (principally counselors), 800 rehabilitation facilities and workshops, and 500 professional organizations and individuals involved with the disabled. The survey requested specific information about current practices in the provision of services to the disabled.

Some of the major findings of the VR sample of the Comprehensive Needs Study were:

- A majority of those individuals rejected by VR as too severely disabled were white, male, urban, and had an average family income of almost $7,000.
- Half of the sample was over 50 years of age.
- Approximately half of the sample had some type of orthopedic impairment;[3] the only other frequently occurring problem listed was cardiac or circulatory in nature (18%).
- 45% of the population were found to be completely independent, 14% slightly dependent, 30% were moderately dependent, and only 11% were severely or totally dependent in self-care and mobility.

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[3] Individuals whose primary disability was mental illness, mental retardation, alcoholism, drug addiction, or character disorder were excluded from the VR sample.

- Most people closed from VR for severity could perform almost all activities of daily living.
- Only minimal relationships existed between diagnostic labels and severity.
- The most severely disabled age group was the young, ages 16-30.
- 68% of persons surveyed had some type of equipment such as wheelchairs, canes, or dentures.
- Two-thirds of the survey respondents stated that they did not currently need any further equipment.
- Almost two-fifths of the population stated that they did not need any additional services; the remaining group, however, indicated an average need of three services per person.

The Comprehensive Medical Rehabilitation Center (CMRC) and vocational rehabilitation samples differed considerably in age distribution, with the CMRC sample having about three times as many individuals under 30 years of age as well as almost three times as many individuals over 60 years of age. It should be noted that the physical needs of the CMRC sample exceeded those of the VR sample. Their major needs included rehabilitation therapy, attendant care, and equipment.

The data analyzed for the Comprehensive Needs Study did not report any detailed comparisons between urban and rural needs; however, two important factors surfaced that bear mention. Twenty-seven percent of respondents serving rural clients and fifty-two percent of respondents serving urban clients agreed that the client's place of residence (urban vs. rural) had an influence on most counselors' decisions to accept and provide services to clients (p. 511). In addition, in the process of contacting respondents for the VR survey, it was discovered that the proportion of persons rejected from large urban areas was strikingly lower than for persons living in small urban rural areas (p. 808). This suggests that clients may be served not on the basis of need or disability, but rather on the availability of resources in or near the client's residence.

Regional Surveys

Goodyear, Bitter, and Mick (1973) compared several characteristics of rural, rural-urban, and urban vocational rehabilitation state agency clients. Their study included a ten percent random sample of 7,246 closed VR cases from RSA Region VII during fiscal year 1971. The total sample was 748; 143 cases were closed as unsuccessful, 332 cases were closed as not eligible for VR services, and 273 cases were closed as successfully rehabilitated.

For the purpose of the study, rural was defined as those individuals living in counties in which more than 50% of the population lived in communities of 1,000 or less, and not adjacent to an urban center. Rural-urban clients were defined as those individuals living in a county which contained no community of 50,000 or more. Urban clients were defined as those individuals living in counties having a metropolitan community of over 50,000. Goodyear et al. reported that of the 748 clients included in this study, 93 (12%)

were from rural counties, 133 (18%) were from rural-urban counties, and 522 (70%) were from urban counties.

Utilizing a variety of statistical analyses of data collected from the state VR agencies' case service report (R-300), the following major findings were reported:

- Rural areas have fewer non-white clients than urban areas.
- Rural areas serve fewer clients with mental disabilities.
- Rural counties have a greater number of disabilities with unknown etiology than urban areas.
- The average time for readiness for employment for rural client rehabilitants was greater than for urban clients, 1.5 months to 1.0 months respectively.
- Rural areas had a better rate of success than urban areas; 80 percent as compared to 63 percent were eligible.
- No significant difference was noted with regard to types of employment selected between clients in rural and urban settings.
- No major differences between rural and urban clients were observed when comparing changes in earnings. Further, no differences were noted in changes in monthly amount of public assistance received by rehabilitation clients as a result of receiving rehabilitation services.

State Surveys

Since a large part of the rehabilitation resources and funds are administered at the state and local levels, the majority of needs assessments have been conducted at these levels. Most of the data collected and reported in this section relates to statewide assessments without specific reference to rural areas. When possible, rural needs and the difference between rural and urban populations will be highlighted.

The Michigan Vocational Rehabilitation Services Division (Struthers, 1975) sponsored a survey of households in Michigan to determine the number of persons who were severely disabled and to collect detailed information about their need for rehabilitation services. A probability sampling of households resulted in data being collected from 12,000 people between the ages of 16-64. A person was considered disabled if any health condition limited the kind or amount of work he/she could do. It was estimated that the prevalence of disability in Michigan is 7.7% (1.8% lower than the 1970 U.S. Census figure of 9.5%). This resulted in a sample of 1,061 disabled persons, with 86% of them being classified as severely disabled. Ten percent of the sample refused to be interviewed.

Among the important differences found between the disabled and the non-disabled, some of primary interest are:

- The disabled are older than the non-disabled.
- The educational level is lower for the disabled.
- More of the disabled are female.
- More of the disabled are black.
- The disabled are more concentrated in the Detroit Metropolitan area and in rural areas than other areas.

- The disabled have lower family incomes than the non-disabled.

Eleven percent of the disabled sample lived in rural areas, making the prevalence rate about 9.2% as compared to 7.8% of the combined urban areas. In comparing the rural disabled with the urban disabled, the groups were very similar in terms of types of disabling conditions, economic conditions, the years of work experience, percentage having a driver's license, and the use of vocational rehabilitation services (14 percent for both groups). The rural sample differed in that they were unable to make use of public transportation, they were older, and they showed less interest in obtaining rehabilitation services (38% vs. 43%). This latter difference may be due to a confounding variable of age. The rehabilitation services that the disabled (urban and rural combined) needed were:

- Medical services (43%)
- Help in finding and obtaining a suitable job (43%)
- Professional help to decide on suitable work (21%)
- Training (33%)
- Financial assistance while in training (32%)
- Help with problems after starting to work (21%)

No breakdown by rural areas was provided with regard to service needs.

In an interagency effort, Minnesota surveyed a stratified random sample of households in the state (Liu, 1978). The major purpose of the study was to provide information for program planning and evaluation of service provision to disabled individuals, including estimates of the number of disabled, information on the nature and severity of disabilities, and identification of needs.

The study identified 964 disabled persons of which 509 resided in urban areas and 455 in rural areas. The results of the survey (Table 6), which compare urban and rural unmet service needs, indicate that urban disabled persons report a greater need than rural disabled persons for each of the services listed. This contrasts with results of other needs assessments reported in this section.

A recent study, by the Vocational Rehabilitation Division (State of Nevada, 1975), examined the planning needs of its five programs. Using a stratified random sample, interviews were conducted in 892 households. Data collected included information on the types of disabling conditions, the effect of disability on employment, estimates of disability in Nevada, and current use of rehabilitation services.

Major results of the survey indicated that 21.6 percent of the population reported "limitations." Approximately 12 percent reported that they had been denied jobs or had lost jobs as a result of disabling conditions. Table 7 reports percent of individuals surveyed with activity limitations (by limitation) for rural and statewide areas. Table 8 provides the type of work interference experienced by disabled individuals for rural and statewide areas. As can be

Table 6

Public Services Received and Needed by Disabled Persons Residing in Urban and Rural Minnesota,[1] The Assessment of Disability in Minnesota (November, 1978)

	Services Received During Past 12 Months				Unmet Service Needs[3]			
Type of Services[2]	Urban		Rural		Urban		Rural	
	N	%	N	%	N	%	N	%
Vocational Services:								
Career or Job Planning	22	2.3	13	1.3	33	3.4	16	1.7
Job Training	17	1.8	7	.7	41	4.3	15	1.6
Sheltered/Sup. Employment	5	.5	2	.2	7	.7	4	.4
Job Finding Assistance	21	2.2	9	.9	37	3.8	17	1.8
Personal Services:								
Personal or Family Pro. Counseling	51	5.3	12	1.2	49	5.1	10	1.0
Home Health Care	17	1.8	13	1.3	15	1.6	13	1.3
Home Delv. Meals	4	.4	3	.3	4	.4	8	.8
Housekeeping & Home Mtn.	16	1.7	12	1.2	25	2.6	20	2.1
Therapy:								
Physical or Occup. Therapy	33	3.4	14	1.5	24	2.5	16	1.7
Speech Therapy	15	1.6	11	1.1	19	2.0	10	1.0
Hearing Therapy	2	.2	3	.3	17	1.8	14	1.5
Educational Services:								
Special Education Program	63	6.5	30	3.1	55	5.7	24	2.5
Day Act/Day Care Program (out of home)	3	.3	1	.1	8	.8	3	.3

Table 6, continued

Type of Services	Services Received During Past 12 Months				Unmet Service Needs			
	Urban		Rural		Urban		Rural	
	N	%	N	%	N	%	N	%
Special Living Arrangements:								
Full Time Living Arrangements Outside of Home	1	.1	3	.3	3	.3	2	.2
Public Housing/Subsid. Housing	8	.8	2	.2	12	1.2	10	1.0
Org. Recreational Services	36	3.7	9	.9	43	4.5	6	.6

1. The urban area in this analysis includes the seven-county Twin Cities Metropolitan Area defined as Region II (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties) and the rural area encompasses the remaining 80 counties in Minnesota.

2. Percentages are based on the total number of disabled persons identified by the study. The study identified 509 disabled persons in the urban area and 455 in the rural area.

3. There figures represent persons who had not received the indicated services in the past 12 months but perceived the need for them.

Source: Liu, 1978

Table 7

Percent of State with Activity Limitations

Disability	Rural	Statewide
Amputation	---	.3
Orthopedic	4.8	4.5
Vision Limitation	7.4	9.1
Hearing Limitation	3.9	2.5
Heart Condition	3.1	3.2
Other Physical	10.3	8.2
Mental Condition	1.9	1.9
Any Limitation	24.1	21.6

Table 8*

Percent of State with Work Interference

	Rural		Statewide	
Disability	Lost or Denied Job	Denied Raise or Promotion	Lost or Denied Job	Denied Raise or Promotion
Amputation	---	---	.2	---
Orthopedic	.9	.9	2.9	1.4
Vision	2.5	.6	2.9	.6
Hearing	.8	---	.2	.3
Heart	1.9	1.2	1.9	.5
Other Physical	2.3	.6	3.1	1.1
Mental/Emotional	.3	---	1.2	.3

*Source: State of Nevada Needs Assessment, 1975.

noted, rural individuals reported a larger percentage of activity limitation due to disabling conditions. The reader will also note that no major dissimilarities were reported between rural and statewide percentages for work interference with two exceptions: the loss or denial of employment due to mental/emotional and orthopedic disabilities.

Other State Needs Assessments

In addition to using survey techniques, states have also conducted needs assessments via public forums. Three recent assessments are presented in this section.

The State of Arkansas (1976) held eight regional public hearings on the need for VR services. The meetings were held in the major city of each regional area with a total of 450 people participating throughout the state. The meetings produced a list of recommendations for the State Division of Rehabilitation Services to more adequately meet the needs of the disabled in Arkansas:

- reach and serve more severely handicapped individuals
- increase public awareness of rehabilitation services and programs
- improve transportation facilities, especially in rural areas
- remove barriers in buildings
- provide modified housing
- increase use of volunteer agencies in various parts of the state
- improve involvement in determining needs

- create a central referral and information unit
- provide more facilities for special groups, i.e., blind, deaf, spinal cord injured
- develop a service directory

The disabled participants felt that public forums increased community attention to their needs and that public forums should be used more frequently.

The second study, through a series of monthly meetings, identified a list of needed support systems for developmentally disabled children and their parents in two counties in Georgia, one of them rural. The services, in addition to the public school classes, that were identified were (Kirchman, Sevener, & Harriett, 1979):

- In-home training to assist the family in learning how to deal with behavior, physical, or other problems that may occur only in the home setting.
- Family counseling to assist the family in dealing with their feelings, social problems, etc., related to their handicapped child.
- Environmental modification to assist in physical management of an orthopedically handicapped person in the home.
- Crisis intervention to assist families with crisis situations related to or dramatically affecting the handicapped member.
- Homemaker services that relieve the family of some home care responsibilities in order to give them more time and energy to spend with their handicapped child.
- Pharmaceutical assistance in managing and monitoring difficult drug control situations, especially as related to seizure control or psychoactive drug use.

- Leisure time assistance to provide training in and opportunities for the enjoyable use of leisure.
- Recreational programs to develop leisure and physical recreation skills whenever possible in settings that provide for interaction with non-handicapped peers.
- Respite care services to provide community short-term residential services for the handicapped person while the parents vacation or seek other temporary relief from the demands of caring for a handicapped person.
- Emergency care to provide residential care for the handicapped family member when parents have emergencies (hospitalization, death in family, etc.) that require them to leave home.

In another study conducted in three rural counties in Washington (Mykut, 1979) a three-level approach was used in assessing the needs of the developmentally disabled. First, a list of all available service agencies was compiled for the three counties. Second, a modified key informant approach was used to identify the needs as seen from the perspective of the service delivery professionals. And third, the parents of the disabled children were asked to identify a list of needs. The needs identified fell into four categories:

- Continuing local diagnostic follow-up services.
- Maintaining an information and referral network among the existing service agencies.
- Broadening parent counseling services initiated at the time of birth, in the areas of accepting the handicap, parenting skills and adjusting to the social consequences of having a handicapped child.
- Reducing barriers to service delivery created by the rural setting.

Additionally, these service providers saw the major obstacles to meeting the needs as limited money and community apathy about the developmentally disabled.

In summary, it can be clearly seen from this conglomerate of studies that the current state of the art on the needs of rural disabled persons is not well formed. Some of the studies report conflicting information about the rural disabled; many of the studies are outdated and of little use in attempting to obtain a comprehensive picture of the rural disabled.

SECTION III

B. Methodological Issues in Needs Assessment

The assessment of vocational rehabilitation needs is a process still in its infancy. Needs assessment is an undefined process viewed as acquiring an estimate or evaluation of a social condition, situation, or circumstance in which "something" is required, desired, or wanted. We are just beginning to produce the requisite instruments and procedures and the knowledge to comprehend the wealth of data we accumulate.

Needs assessment, to be properly understood, should be viewed in the context of a component of the planning process. The planning process traditionally includes: stating a mission, defining objectives, examining the need, developing strategies, implementing the plan, and follow-up evaluation. If needs assessment is viewed in this context, its purpose and use become clear.

Concerns and criticisms regarding needs assessments are varied. They include an unclear or inadequate definition of basic terms (such as need), faculty methodology, non-existent theoretical constructs, and a lack of attention to practical administrative concerns (such as limited resources). The major criticism, however, is that policy makers do not use the data collected.

Needs

Need can be defined in the following ways: (1) normative need - a situation or status that deviates from an accepted standard; (2) perceived need - from the point of view of the researcher, the individual being assessed, or experts providing testimony; (3) expressed need - as voiced by the individual or consumer group seeking the "needs"; and (4) relative need - as articulated by comparison groups.

A difficulty experienced in reporting needs has been that needs have too often been couched in terms of services rather than individual needs. For example, needs are often stated as need for child care services, need for dental service, etc. In addition, needs assessments too often focus on service program expansions, changes in services available under a particular program, or decreases in the number or types of services available. Another tendency is to verbalize needs in the same breath as problems. Obviously, needs arise out of community or individual problems, but they are not synonymous terms.

Methods

A variety of strategies exists for assessing human and social needs. They can, for the most part, be categorized as primary and secondary data sources. Primary data sources are those individuals being studied (i.e., the rural disabled). Secondary sources are people or places where one might go to learn about the individuals being studied (i.e., "experts" or statistical records). Under these two areas, five major needs assessment methods have been utilized. They are key informant, community or public forum, rates-under-treatment, social indicators, and field survey method (Siegel, Attkisson, & Cohn, 1977; Warheit, Bell, & Schwab, 1977). Each of these methods employs a distinct procedure and has a variety of advantages and disadvantages.

Key Informant. This research technique is designed to tap the knowledge of individuals who, by reason of their professional expertise or organizational affiliation, have knowledge of the community's problems and needs. These individuals may include community leaders, public officials, social agency personnel, and other primary service delivery providers.

The information is gained from the "informants" via a structured questionnaire or interview. According to Warheit et al. (1977), the most often used method is the personal interview because it has many advantages over other methods, including a high rate of response. A profile of needs emerges from the consensus of opinion obtained from all the data.

Some of the advantages of this method include the following: (1) key informants are relatively easy to locate; (2) the cost of administration is low; (3) a wide variety of perspectives can be obtained; and (4) a sense of community investment or participation is a by-product.

There are also disadvantages to this method which can influence the outcome: (1) key informants may be biased toward their own professional perspectives; (2) community leaders and professionals tend to be of a different socioeconomic group than those being studied, introducing the bias of socioeconomic differences; and (3) little empirical research has been conducted on the validity or reliability of this method with regard to identifying human service needs (Warheit, Buhl, & Bell, 1978).

Community or Public Forums. Public forums are generally open community meetings in which all interested individuals have an opportunity to comment on the community's problems and needs. Often these meetings are "focused" by prepared topics or outlines; however, care is often exercised to insure that the meetings allow for spontaneity and frankness. Needs are discerned through any consensus arising from comments made by the participants.

Advantages of the public forums include the following: (1) they enhance community participation by allowing interested parties and individuals to voice their needs directly; (2) forums and public meetings tend to be easy to arrange and inexpensive to conduct; and (3) flexible scheduling and site selection, as well as informality, can enhance the overall quality of results.

There are also disadvantages, including the following: (1) the meeting may deteriorate into a "gripe session" if not properly structured; (2) processing and analyzing the information received is time-consuming and difficult; and (3) forums may raise community expectations that prove difficult to fulfill.

Rates-Under-Treatment. The rates-under-treatment approach is a method of validating the needs of individuals by examining their use of certain services in the community. Bell, Nguyen, Warheit, and Buhl (1978) point out the underlying assumption that the needs of the individual or community can best be estimated from a sample of persons who have received care or treatment. A variation of this approach is the demonstration project which allows for documentation of the feasibility and potential effectiveness of a particular service or treatment approach as well as community or individual need.

In the rates-under-treatment or service utilization approach, data from a variety of sources are analyzed to establish need. The analysis may look across a number of socio-demographic and geographic variables to provide a cross-sectional picture of service utilization.

Advantages of the rates-under-treatment method include the following: (1) access to existing data provides a low cost method; (2) data are usually available from a number of sources (U.S. Census, annual reports, monthly records, etc.); and (3) data are often available for numerous areas (e.g., housing, welfare, medical care, and employment).

Disadvantages of the method include: (1) the available data may not be valid and reliable; (2) there are a large variety of data storage methods (e.g., hand counts to vast computer information systems); and (3) differences may exist between those who seek services and those who do not.

Social Indicators. The social indicators approach is an inferential attempt to identify needs on the basis of descriptive geographic, ecological, environmental, socioeconomic, and demographic characteristics of the community. The basic assumption is that a correlation exists between certain "social indicators" and the needs of individuals. Thus, social indicators are used as a barometer, measuring the fluctuations between actual conditions and ideal conditions in the areas of human need.

The social indicator approach relies almost exclusively on existing data. It is, to some degree, a more global measure of need than the rates-under-treatment approach, requiring the use of data often collected with other purposes in mind.

The advantages of the social indicators method include the following: (1) data are used from existing sources making cost low and access easy; (2) uniformity of data across large areas provides for comparison of data on different community levels; and (3) data are collected over time, assisting in longitudinal analysis of needs.

Disadvantages include the following: (1) the quality of the original data substantially affects the validity of the needs assessment; (2) the assumption that social indicators are a true reflection of individual and community needs may not be valid; (3) there is a tendency to overgeneralize from data collected; and (4) conceptualizing and collecting the data from different sources can be a time-consuming task.

Field Survey Method. The field survey method is a research-based method of systematically gathering data from primary sources, that is, from those individuals whose needs are under study. Generally, this type of survey consists of a structured interview questionnaire designed to obtain specific information from individuals regarding their needs. Usually, surveys of this type incorporate techniques for randomizing a sample of the population to be interviewed, thus attempting to insure representativeness.

Several techniques have been employed to conduct the survey with varying degrees of success. These techniques include telephone interviews, mailed questionnaires, and personal interviews. The personal interview, although more costly and time-consuming, yields the best results. Bell, et al. (1978, p. 283) provide an excellent enumeration of the strengths and weaknesses of these three techniques.

Advantages of the field survey method include: (1) careful design and strategy allow for more valid and reliable use of results; (2) information is obtained directly from the individual in need; (3) data collected add to or verify needs identified through other methods; and (4) this approach allows for flexibility in design and techniques not available with other approaches.

Disadvantages of this method include: (1) a great deal of technical sophistication is required to yield valid results; and (2) the cost is high in terms of personnel, administration, data processing and analysis, inaccessibility of respondents, and rapid obsolescence of findings.

In summary, with each circumstance the use of a specific technique must be judged against its advantages and disadvantages within the context of the objectives of the needs assessment, the resources available, and the social structure of the community (Warheit et al., 1977).

Purpose

As mentioned in the introduction, a major criticism of needs assessments is that the data/information collected is not used or under-used. If needs assessments are to be used, they must serve an important function.

With the information collected in needs assessments, policymakers can make important decisions about providing services to meet the needs of disabled individuals. With adequate information, policymakers can more effectively plan service delivery systems and programs in a logical, practical, and coherent manner. Priorities for allocating resources can be established according to need. Operational plans can be defined more clearly, and program effectiveness can be measured with more understanding if program purposes and objectives are clear.

Needs assessments allow for resource allocation according to greatest need based upon certain demographic, geographic, or socioeconomic characteristics of the individual or community in need (e.g., rural disabled). Resources may include funds, staff, rehabilitation or medical facilities, vocational rehabilitation offices, and vocational training programs.

On another level, needs assessments may be used by policymakers to request additional funds from state and federal legislative bodies. In addition, needs assessments may be used to substantiate the continued existence of rehabilitation services/programs previously established in high areas of need (Bishop, 1973-74).

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SECTION IV

Summary

State of the Art

SECTION IV

Summary

State of the Art

The review of the professional literature reveals a substantial lack of knowledge about the rehabilitation needs of disabled persons living in rural and sparsely populated areas. Yet the most recent data suggest that approximately 8.5 million disabled persons live in non-metropolitan and rural areas. Further, data suggest that many essential rehabilitation-related services in rural areas are either available on a severely restricted basis or non-existent. Consequently, it appears that America's rehabilitation accomplishments in rural areas have been limited. To improve our efforts, we must investigate the needs of rural disabled persons more systematically and promote innovative strategies and rehabilitation techniques to meet these needs.

An indepth examination of the literature indicates that a number of significant barriers exist which impede the vocational rehabilitation of disabled persons in rural areas. These barriers range from the more obvious - geographical isolation, to the more subtle - rural attitudes and beliefs. Because of geographical isolation, small communities suffer in many ways that have a profound effect on disabled persons living in these communities. The tax dollar, in rural areas, must often be stretched in many directions with funds being allocated first to meet the essential community services such as water, sewage, roads, and education. These priorities often leave few pennies for rehabilitation efforts.

Rural communities are typically plagued by a lack of employment opportunities. Industries have principally been centered in urban areas where the pool of skilled workers is much larger. Often rural citizens who are gainfully employed must travel great distances to maintain an adequate income.

In the area of health care, rural towns and communities find attracting doctors, nurses, and other professionals difficult because they cannot compete with the amenities of urban living. Hospitals tend to locate near large urban areas forcing rural people requiring health services to travel many miles. Rehabilitation counselors must also travel, often over a several county area, to reach disabled clients.

Transportation holds the key to overcoming some of these barriers. However, mass transportation systems are virtually non-existent in rural areas. Disabled persons often must make alternative arrangements to meet their basic transportation needs for obtaining food and health care services.

Lack of adequate education is another important concern. To improve their quality of living, disabled persons must have educational opportunities. Although attempts have been made at providing special education services, the associated high cost and difficulty in recruiting qualified teachers has made the provision of such services difficult.

A variety of innovative approaches to meet the vocational rehabilitation needs of rural disabled persons has been attempted during the last several decades with varying degrees of success. Principally, these projects have been funded by the federal government (DHEW) and implemented at state and local levels to examine the feasibility of certain service delivery approaches. Saturation of services in a given geographical area was shown to be successful in Wood County, Wisconsin, and to some degree in Harlan County, Kentucky. This approach, however, requires a great deal of financial support and is not feasible on a national level at this time. Other approaches have been attempted, such as the use of mobile units to travel to outlying rural areas to provide diagnostic services, teams to complete initial rehabilitation diagnosis and provide other specific vocational rehabilitation services, and indigenous aides in rural areas to assist rehabilitation professionals.

Health care in rural areas has been stimulated on a select basis through the use of private foundation grants as well as federal support. Rural communities have examined methods to recruit health care professionals in a variety of ways with only limited success. Health care facilities, although having improved in the last half century, still remain a problem. Rural communities primarily have answered this dilemma by establishing regional medical centers that serve rural communities from a central location. In some rural areas, small community clinics have also appeared. But for the specialized rehabilitation needs of disabled persons (e.g., spinal cord injured), travel to urban areas is still a necessity.

In the last several decades, a variety of needs assessments has been conducted at the national, regional, and state levels to gather information about the needs of disabled persons. The majority of these needs assessments have not focused on the needs of rural disabled persons, consequently leaving many questions unanswered. What are the true needs of rural disabled persons? Are their needs significantly different from urban disabled persons? Does ethnicity play a major role in the nature or degree of rural disabled needs? What are the resources currently available? How can we more effectively and efficiently meet the needs of rural disabled persons?

Based on population trends, state disability rates, health interview data, results of needs assessments, and federal priorities, there is obviously a pressing need for improved rehabilitation services among the rural disabled. It would be tempting at this point to propose one or more innovative treatment programs to satisfy these needs. After examining the research literature and selected data bases relevant to the rural disabled, however, it is felt that such a proposal would be, at best, premature.

Before a cost efficient, effective, service effort can be mounted, a detailed needs assessment of the rural disabled, as well as a survey of current resources and major service deficiencies, should be conducted. Only after the needs of the disabled have been elaborated and compared with the availability of existing services can a rational, long-term national plan for meeting the needs of the rural disabled be developed.

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